A13 Cont

(i) transmitting data to the terminal by applying a differential voltage to each of the pair of wires through each respective pole.

13. (New) The method described in claim 12, further comprising the step of twisting the pair of wires together.

14. (New) The method described in claim 12, further comprising providing an insulator to electrically separate the pair of wires.

REMARKS

The Office Action objects to the drawings for omission of reference to several drawing indicia from the specification. Amendment to the Specification has been made in response to this objection. Section titles have been added throughout the Specification, where appropriate, as suggested by the Examiner. Further amendment to the Specification has been made in response to the objections to the language at page 2, line 19, page 3, lines 15 – 17 and page 4, lines 25 – 26. No new matter has been added hereby.

Claims 3 – 5 and 7 – 11 were rejected under 35 USC §112. The claims amendment above is believed to overcome these rejections.

Claims 1, 9 and 10 were rejected under 35 USC §102 as unpatentable over patent No. 4,621,170 to Picandet (the '170 patent). Claims 2 – 8 were rejected under 35 USC §103 as unpatentable over the '170 patent and patent No. 6,066,799 (the '799 patent) to Nugent. Claim 11, as dependent from claims 2 and 8 are rejected under 35 USC §103 as

unpatentable over the '170 and '799 patents in further view of patent No. 5,869,907 to Marler. It is respectfully submitted that the claims amendments herein place all claims in the application in condition for allowance over all cited art.

As described in the application, the present invention is directed to apparatus for providing electrical energy from a single terminal of a power source through a pair of wires. The pair of wires simultaneously carries data by individual, differentiated signal between the two wires. As stated at page 1, line 10, "...in that the wires are mutually insulated to such an extent that they are suitable for a symmetrical, differential data transmission, and in that the two wires have the same electrical resistance and jointly have a cross-section which is suitable for energy transfer from a terminal of a voltage source to network users via both wires" (emphasis added). In other words, energy is conveyed cooperatively through both wires (which together are of a sufficient total size) while data is being transmitted as a signal difference between the two energy-conveying wires. Since the signal differential voltage is relatively small, the insulation between the two wires is provided to be merely adequate to maintain the relatively small voltage differential involved in the data transmission. In other words, the energy being conveyed by the two wires does not involve a differential, whereas the signal being conveyed does involve a differential between the two wires.

In contrast, the '170 patent connects a first wire individually to one terminal (22) and a second wire to the other terminal (28) of a voltage source (20) (see Figures 2 and 3

and column 4, lines 37 – 46). Thus, the '170 patent teaches power transmission by "The positive pole (22) ...connected... to a junction (26).. the negative pole (28) ...connected... to a junction (32)" (see column 4, lines 40 – 46). The '170 patent further teaches "[E]ach of the wires (31, 33) within the pair (14) which is schematically shown in a twisted form within FIG. 2 ends at one of the input junctions (52, 54) of a rectifier bridge..." (see column 4, lines 59 – 62). Whereas claim 1 of the present application, as amended, requires that "energy is transferred from the single terminal of the voltage source equally through the two wires and data is transmitted differentially through each wire." Thus, the invention depicted in amended claim 1 is clearly distinct from the teachings of the '170 patent. As such, it is believed that claim 1 is allowable, as are claims 2 – 8 dependent therefrom.

Claim 9 has been amended to more clearly show that "an energy transfer from a single terminal of a voltage source via the two wires (1, 2) of the network connection is realized." This amended claim 9 is also submitted to be clearly distinctive over the '170 patent.

The Office Action notes in paragraph 8, regarding claim 10 that Picandet teaches two wires "having same electrical resistance (column 5, line 28 – 29). However, Picandet states at column 5, lines 28 – 29 that: "The circuitry for each wire within a pair is arranged in a symmetrical form." It is respectfully submitted that symmetrical circuitry is different

from symmetrical wires, and that neither Picandet nor any other cited reference discloses a symmetry of resistance between wires as is taught by the present invention and claimed in claim 10. Claim 10 is amended to more clearly describe the invention and to be clearly distinctive over the '170 patent.

It is respectfully submitted that the additional cited prior art is not a barrier to obtaining a patent for the invention disclosed.

Marked-up copies of the amended specification paragraphs and amended claims 1, 3-5 and 7-11showing the changes are appended hereto.

In view of the foregoing amendment and remarks, it is respectfully submitted that all claims pending are allowable. Therefore, reconsideration and allowance are respectfully requested.

Respectfully submitted,

Michael R. Phillips
Reg. No. 34,407
Attorney for Applicant

Kaplan & Gilman, LLP
900 Route 9 North
Woodbridge, NJ 07095
732-634-7634
F:\Philips Electronics\PTO\Amendments-Responses\Response to OA for '930.doc

MARKED UP VERSION SHOWING CHANGES TO THE SPECIFICATION:

At page 2, paragraph beginning on line 18:

Since the insulation can be formed in a relatively simple manner, a lacquer coating, a synthetic material coating or a tubing may be provided as insulation[s] as described in further embodiments of the invention.

At page 3, paragraph beginning on line 15:

Fig. 4**A** is a cross-section through a third embodiment of a network connection according to the invention, in which the wires are formed as stranded wires.

Page 4, paragraph beginning on line 3:

Due to the specific construction of the two wires 1 and 2 of the network connection according to the invention, which will be further described hereinafter, these wires 1 and 2 are also simultaneously suitable for a symmetrical, differential data transmission **+D and –D**.

Page 4, paragraph beginning on line 14:

The mutual insulation of the two wires may be relatively simple and thin because this insulation should only insulate the relatively low data transmission voltages **+D and –D**. Since a pole for the power supply is jointly coupled through the two wires, these relatively high currents or voltages do not require insulations between

the wires.

Page 4, paragraph beginning on line 22:

In the embodiment shown in Fig. 2, only one of the wires, namely the wire 1, is provided with a thin outer insulation 13. This insulation 13 may be, for example, an insulating tubing or a lacquer coating. This insulation 13 should only be formed in such a way that it is adequate for the **separation of relatively small** opposite data transmission voltages occurring in the two wires 1 and 2. [which voltages are, however, relatively small.]

Page 5, paragraph beginning on line 15:

The complete network connection is surrounded by an outer insulation [21] **25**.

Page 5, paragraph beginning on line19:

In Fig. 4A, the stranded wires 32 and 33 are mutually separated and insulated **in a second embodiment 31** by means of an insulation 34. The complete stranded wires 32d and 33 are embedded in an insulation 35 so that they cannot move with respect to each other, and the insulation 34 ensures a safe insulation of the two stranded wires 32 and 33 forming part of the two wires 1 and 2.

MARKED UP VERSION SHOWING CHANGES TO CLAIMS 1, 3 – 5 and 7 - 11:

1. (Amended) A network connection comprising at least two wires (1, 2) for electrically connecting network users (3, 4, 5, 6, 7) in a network, characterized in that the network connection has a symmetrical structure and the two wires (1, 2) are twisted, in that the wires (1, 2) are mutually insulated to such an extent (13; 21, 22; 34; 35) that they are suitable for a symmetrical, differential data transmission, and in that the two wires (1, 2) have the same electrical resistance and jointly have a cross-section which is suitable for energy transfer from a **single** terminal of a voltage source to network users (3, 4, 5, 6) via both wires (1, 2) **wherein energy is transferred from the single terminal of the voltage source equally through the two wires and data is transmitted differentially through each wire.**

3. (Amended) A network connection as claimed in claim 2, characterized in that only one of the wires (1; 2) in the network connection is provided with [a] **an insulative** lacquer coating (21) [used as an insulation].

4. (Amended) A network connection as claimed in claim 2, characterized in that only **one** of the wires (1; 2) in the network connection is provided with [a] **an insulative** synthetic material coating (13) [used as an insulation].

5. (Amended) A network connection as claimed in claim 2, characterized in that only one of the wires (1; 2) in the network connection is surrounded by [a] **an insulative** tubing [used as an insulation].

7. (Amended) A network connection as claimed in claim 1, characterized in that

each of [network connection with] the two wires (1, 2) [each] has a double form, and in that the two [network connections] **wires** are twisted.

8. (Amended) A network connection as claimed in claim 1, characterized in that [the] **an** outer insulation (16; 25; 35) of the network connection is formed in such a way that the position of the two wires (1, 2) in the network connection is visible and in that the twisting of the two wires (1, 2) is interrupted.

9. (Amended) Use of a twisted double cable **comprising two wires** as a network connection in a network, in which both a symmetrical, differential data transmission via the two wires (1, 2) and an energy transfer from a **single** terminal of a voltage source via the two wires (1, 2) of the network connection is realized.

10. (Amended) Use of a cable having at least two wires (1, 2) for electrically connecting network users (3, 4, 5, 6, 7) in a network, wherein the [network connection] **cable** has a symmetrical structure and the two wires (1, 2) are twisted, the wires (1, 2) being mutually insulated to such an extent (13; 21, 22; 34; [35] **36**) that they are suitable for a symmetrical, differential data transmission, the two wires (1, 2) having the same electrical resistance and jointly having a cross-section which is suitable for energy transfer from a terminal of a voltage source to network users (3, 4, 5, 6) via both wires (1, 2).

11. (Amended) Use of a network connection as claimed in any one of claims 1 to 8, wherein [the] **a** positive terminal is coupled to the network users via the network connection, and wherein [the] **a** negative terminal of [the] **a** voltage source is coupled to the network users via [the] **a** chassis of [the] **a** vehicle.